

rails, and water and gas pipes are in the direction of the flow of the circuit, they are not reduced by electrolysis as they should be if the current were flowing the other way, from the rail to the trolley wire.

NEW BOOKS, ETC.

VENETIA AND NORTHERN ITALY. Being the Story of Venice, Lombardy, and Emilia. By Cecil Headlam. Illustrated by Gordon Home. London: J. M. Dent & Co., 1908. New York: The Macmillan Company. 8vo.; pp. 347. Price, \$2.50 net.

The object of this book is to recall familiar scenes to those who have visited them, to suggest them to others, and to be of use upon the spot; to deal in outline with the history, architecture, and art of towns of northern Italy which lie within the triangular space bounded on the north by the Alps, on the west by the Apennines, and on the east by the Adriatic Sea. It embraces the Lombard Lakes and the Lombard Plain; the chief towns that lie in the valley of the Po and its tributaries and along the great Aemilian Way, which the railway follows from Como and Milan to Bologna, Rimini and the sea. Following the railroad northward through Ravenna, Ferrara, and Padua to Venice, and omitting the northeastern portion of the Veneto, it treats of the towns that lie at the foot of the Alps, from Vicenza, Verona, and Brescia to Bergamo. In each Italian town there is a distinct personality, an individual charm, the outcome of the history and development so curiously individual and distinct. The author has endeavored in this book to show the history of each town of which it treats, as it is illustrated by its art and architecture, and he has endeavored to show how the various styles of art and the various buildings enumerated are the direct and natural outcome of history and tradition, of despotism or independence, of invasion or commerce, of political, social, and geographical environment, of the dominating, fascinating personalities who have guided the destinies of these towns. The illustrations are peculiarly charming, and it is little wonder that the author says in the preface that the good wine of Mr. Home's illustrations needs no bush. This attractively printed and bound volume belongs to the "Old World Travel" series.

THE WORLD'S GOLD. ITS GEOLOGY, EXTRACTION, AND POLITICAL ECONOMY. By L. DeLaunay. Translated by Orlando Cyprian Williams. New York: G. P. Putnam's Sons, 1908. 12mo.; 242 pp.

The present work was written by a Frenchman, translated by an Englishman, and Mr. Charles A. Conant of New York furnishes an introduction. The subject is treated in a very interesting manner, and those who deal in any degree with the subject will be benefited by a perusal of its pages. It is filled with most valuable information, some of which cannot be found elsewhere.

CHAPTERS ON PAPER MAKING. By Clayton Beadle. New York: D. Van Nostrand Company, 1908. 16mo.; 182 pp. Price, \$2.

The present volume treats of the theory and practice of beating, and gives the best English practice. It is an extremely technical book which will be of the greatest value to all paper-makers. There is practically no literature available either here or abroad on the lines of this work, and it is to be hoped that more will be forthcoming—books by the same author on other subjects relating to paper making.

THE BOOK OF THE PEARL. By Dr. George Frederick Kunz and Charles Hugh Stevenson. New York: The Century Company, 1908. Royal 4to.; pp. 550. Price, \$12.50.

The preparation of this book has been a joint labor during the spare moments of the two authors, whose time has been occupied with subjects to which pearls are not wholly foreign—one, Dr. Kunz, as a gem expert, and Charles Hugh Stevenson (LL.M., D.C.L.), who has been connected with the U. S. Fish Commission since 1891. For many years the authors have collected data on the subject of pearls and have accumulated all the available literature in either printed form or in manuscript. Dr. Kunz has been fortunate in being able to handle personally the crown jewels of Russia. The English and Saxon crown jewels were also seen under favorable conditions. In "The Book of the Pearl," no possible point of interest relating to pearls is left untouched. It illustrates the use of pearls as objects of art and ornamentation, past and present, showing the gradual development and changes in prevailing fashions; it notes their decorative value as shown in portraiture and in imaginative designs by the greatest artists; it brings together the many theories and facts concerning their origin, growth, and structure; it sets forth their values, artistically and commercially, and shows how these are determined; it describes the proper treatment and care necessary to enhance and preserve their luster and beauty; it recounts the history and methods of the various fisheries throughout the world, and directs attention to the importance of conserving the resources, and the possibilities of cultivating the pearl oyster. One hundred full-page plates go to the making of this exquisite

book—three photogravures, seventeen pages in full color, and eighty in tint and black—all showing some rare and rich or unusual phase of pearl life or romance. These include portraits of famous women wearing superb pearl ornaments, wonderful crown jewels, notable jewels, and unusual uses of pearls.

MAGNETOS FOR AUTOMOBILES. HOW MADE AND HOW USED. By S. H. Bottone. New York: D. Van Nostrand Company, 1908. London: Crosby, Lockwood & Son. 16mo.; 88 pp. Price, \$1.

The author has endeavored as far as is permissible within the limits of a small work to give a brief outline of the history, construction, and furnishing of the magneto as generally used by motorists in the hope that an amateur provided with a machine of this type may not be at a loss should slight repairs or adjustments be required when the services of an electrical expert are not obtainable, and given the requisite tools, skill, and patience, may be able in an emergency to make the repair himself. That the magneto system has found much public favor is not surprising when the many advantages of that system in avoiding the trouble and expense entailed by constantly recharging the accumulator cells, the attendant danger of spilled acid and burnt-out coils are considered. The illustrations might have been larger and a great deal better.

THE STORY OF GOLD. By Edward Sherwood Meade. New York: D. Appleton & Co., 1908. 16mo.; 206 pp. Price, 75 cents, postage extra.

This book is an attempt to present the development of the modern gold mining industry with special reference to the connection between its development and the habit and vogue of business prosperity. The connection between the gold supply and prosperity is now thoroughly understood. Without a supply of gold increasing at a rate corresponding to the volume of business transactions, the prices must decline and the scale of business operations must be curtailed. On the other hand, in a gold mine furnishing adequate supply of reserved money which serves as a foundation for the immense edifices of credit and token money, the prices tend upward and prosperity endures and increases. From the author's account of the history of gold production material is drawn which serves as a basis for a forecast of the future of gold production. For a small-sized volume it is well illustrated.

SEWERS AND DRAINS. By Anson Marston, C.E. Chicago: American School of Correspondence, 1909. 8vo.; 156 pp. Price, \$1.

In recent years such marvelous advances have been made in the engineering and scientific fields, and so rapid has been the evolution of manufacturing and constructive processes and methods that a distinct need has been created for a series of practical working guides of convenient size and low cost embodying the accumulated results of experiments, and the most approved modern practice along a great variety of lines. To fill this acknowledged need is the special purpose of the series of handbooks of which this is the latest. It is especially adapted for the purposes of self-instruction and home study. The method adopted in the preparation of this volume is that which the American School of Correspondence has developed and employed so successfully for many years. It is not an experiment but has had the severest of all tests, that of practical use which has demonstrated it to be the best method yet devised for the education of the busy working man. The book is excellently illustrated with well-chosen engravings and diagrams.

THE LAW AND COMMERCIAL USAGE OF PATENTS, DESIGNS, AND TRADE MARKS. By Kenneth R. Swan, B.A. New York: D. Van Nostrand Company, 1908. 12mo.; 386 pp. Price, \$2.

This is a volume in the "Westminster" series, the object of which is to bring before the keen eye of the non-technical reader an accurate knowledge of manufacturing processes and the practical application of modern science to industries. Each volume is written by an expert to the end that practical readers and all who are engaged in the numerous allied branches of engineering and technical trades may have reliable works of reference. The work is, of course, from the standpoint of English law; for the book, though also published in this country, has its origin in England. The author is a barrister-at-law of the Inner Temple.

CONFESSIONS OF A RAILROAD SIGNALMAN. By J. O. Fagan. Boston and New York: Houghton, Mifflin Company, 1908. 12mo.; 181 pp. Price \$1 net.

The author is certainly familiar with the "tower," and he writes in a fascinating vein that holds his readers spellbound until the end of the book. The contents are "A Railroad Man to Railroad Men"; "The Man"; "The Management"; "Loyalty"; "The Square Deal"; "The Human Equation"; "Discipline." Perhaps a better idea of the contents may be gained from some of the titles of the illustrations: "A Typical Smash-up"; "A Head-on Collision"; "Yard Wreckage"; "A Typical Derailment"; "A Rear-end Collision"; "What Comes from a Misplaced Switch"; "Down an Embankment in Winter," and the "Aftermath." This is not a very cheerful list of titles, and

after a perusal of the book one wonders at the comparatively few accidents compared with the endless possibilities for trouble.

FAR EAST REVISITED. By A. Gorton Angier. With a preface by Sir Robert Hart. London: Witherby & Co., 1908. 8vo.; 364 pp. Price, \$4.20 net.

The author is the editor of the "London and China Telegraph" and "London and China Express." Books of this kind have a singular appropriateness at this moment in a record-making epoch. The East is up and awake, and foundations are being laid for fuller share in the work of the world and for more intimate relations for all that concerns international intercourse and the influence one nation can exert on all others. Change is in order and developments will daily be more and more important, and whatever tends to clearness of ideas as to what is, or helps to guide thought toward what is to be will not fail to find its place in the general scheme of things. In "Far East Revisited" the author has done the public a service in thus reproducing the outcome of personal travel and observations made on the spot. He has repeatedly seen the localities and peoples which he describes and has accordingly been able to illuminate both past and present, so that the comparison thus made gives additional value to the work. The book is divided into four parts: Malaya, China, Korea, and Japan. There are a number of excellent plates.

AMERICAN ANNUAL OF PHOTOGRAPHY. 1909. Volume XXIII. Edited by John A. Tennant. New York: Tennant & Ward, 1908. 8vo.; 328 pp. Price, paper, 75 cents; cloth, \$1.25.

The American Annual of Photography is always a most welcome guest, filled as it is with pretty pictures and articles on improved methods. The present volume is of exceptional interest and shows the constant upward trend of the photographer. It is freely illustrated.

MAGAZINE WRITING AND THE NEW LITERATURE. By Henry Mills Alden, LL.D. New York: Harper & Bros., 1908. 12mo.; 321 pp. Price, \$2.

The author has been editor of Harper's Magazine for forty years. From an outlook of nearly half a century of close association with literature Mr. Alden has been singularly able to discern the forces that have been at work during that period, and to bring them forward with a rare personal touch. That part of the book which relates to magazine writing is really an account of the important influence of periodicals upon general literature and of the relationship to the magazine of every significant writer. The underlying theme of the book is the ever-developing relation of modern literature to life itself. The "new" literature is the result of recent tendencies in thought and feeling which have created new forms of expression.

SHADOW WORLD. By Hamlin Garland. New York: Harper & Bros., 1908. 12mo.; 295 pp. Price, \$1.35.

Do the dead speak to the living? Is there a way to find out whether they do? The "Shadow World" of Mr. Garland is one of the most exciting replies ever offered to such speculations as these—and we do speculate about it. He does not try to convince—he only states what he himself has seen and heard. And it reads like fiction—the little group of a half-dozen men and women whom the author brings together, some half afraid, some openly scoffing, all finally persuaded to form themselves into a little circle, and suddenly finding that one of their own number, a woman, possesses, unknown to herself, the powers of a medium. Several experiments almost transcend belief, and yet—they are testified to by a man's experience.

MACHINE SHOP CALCULATIONS. By Frederick H. Colvin, A.S.M.E., F.I. New York: Hill Publishing Company, 1908. Pocket size. 174 pp. Price, \$1 postpaid.

Figures are simple tools and a help in securing accuracy, in saving time, and making a man more valuable to himself and others. Too many good mechanics get along with only enough mathematical knowledge to count up their wages, but the men who get to the top are not those who depend on others to tell them what gears to use, or the depth of the 9-pitch thread. The author has attempted to show in the present work how simple methods can be applied to everyday shop work. Only such rules and calculations are given as have been proved useful in the shop. For example, anyone would be at a loss to readily find the proper method of using the micrometer gage.

THE HOME BUILDER. By Lyman Abbott. Boston and New York: Houghton, Mifflin Company, 1908. 16mo.; 129 pp. Price, 75 cents.

The versatile editor of "The Outlook" has contributed a most interesting little book of which the contents are as follows: "Her Monument," "The Daughter," "The Bride," "The Wife," "The Mother," "The Housekeeper," "The Philanthropist," "The Saint," "The Grandmother," and "Alone." It is daintily printed and bound.

HANDBUCH UEBER TRIEBWAGEN FÜR EISENBAHNEN. Von C. Guillery. München und Berlin: Druck und Verlag von R. Oldenburg, 1908. 8vo.; 202 pp.

PATENT CAUSES

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